

The hive should be disinfected by scorching.

European foul-brood is treated by introducing young Italian queens and keeping the colonies strong and well supplied with stores. This disease will spread very rapidly during a honey dearth in late spring and early summer. In severe cases, the colonies should be left queenless for one or two weeks before the Italian queens are introduced.

Sacbrood usually disappears after a few weeks and calls for no treatment.

The Use of Nitro-Cultures.

In the report of the Dominion Botanist for the year ending March 31, 1915, he says: "During the last month of the year," viz., December, 1914, it was deemed advisable for this division to prepare nitro-cultures of alfalfa, red clover and peas for distribution to the branch farms."

Such was the genesis of the present system of free distribution of nitro-cultures to farmers, began in the following season of 1916, and now entering its fifth year.

The branch Farms, by their example and reports, and the ocular demonstration to visitors given in the condition of their leguminous crops, started the demand of the farming public for these cultures, which it is our endeavor to stimulate, guide aright, and, to the best of our capacity, satisfy.

For the benefit of those farmers, who have not yet studied this question, we propose to briefly explain the term "nitro-culture".

Since the time of the Romans it has been known that the introduction into a crop rotation of a legume—that is, one of the plants belonging to the family Leguminosae of which the most important members from the farming view point are clovers, peas, beans, and vetches, somehow or other, greatly benefited other subsequent crops. It is only within the last few years that the explanation has been discovered.

The Legumes, as a family in the vege-

Burnbrae Shorthorns

Eighty-three years without change, we have been breeding Scotch Shorthorns. The foundations of many of the best herds in America were laid from our farms.

I am in a position to furnish you with the best in either sex that can be found. High-class young bulls for the breeder and the farmer. Cows and heifers of the finest breeding to start you right, and you cannot afford to start wrong. Every animal that I have sold in two years has been satisfactory, the most of them sold by letter. I can satisfy you with the best in what you want at a price that will give you a chance, and I will pay the freight or express to your station. Augusta Sultan #93092—one of the greatest living sires at the head of my herd. Write and if possible come and see, it is worth while. Post Office, Telegraph, Telephone and Station is Stouffville, Ont. 30 miles from Toronto.

ROBERT MILLER

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Stouffville, Ont.

A NEW IMPORTATION OF 40 SCOTCH SHORTHORNS

arrived home Dec. 17th. From our herd of 125 head we can offer a large selection in choicely-bred bulls and females. Anyone in need of foundation stock may find it to their advantage to look over our offering before making any purchases.

J. A. & H. M. PETTIT

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FREEMAN, ONTARIO

Burlington Jct., G.T.R., only half mile from farm.

Imported Scotch Shorthorns For Sale—three imported bulls, one yearling one two-year-old and one three-year-old herd sire, also a choice two-year-old Orange Blossom of our own breeding and three well bred bull calves about year old. Would consider exchanging an imported bull for Scotch females.

R. M. MITCHELL,

R. R. No. 1.

FREEMAN, ONT.

Spring Valley Shorthorns—Herd headed by Sea Gem's Pride 96365. We have a number of good bulls for sale, including the Champion Ivanhoe 122760, and his full brother also, an extra well bred Rosewood, and others. Write for particulars.

Telephone and telegraph by Ayr.

KYLE BROS., Drumbo, Ont.

Minster Farms—Holstein bulls fit for service for sale. Son of a 14,763-lb. 2-year-old dam, with 650 lbs. butter (in test again at 3 years old, milking higher and tested 4.4% butter-fat). Also a pair of bulls from untested sisters of our 18,864-lb. milk and 777.5-lb. butter, 4 year-old heifer (Marie Calamity Payne). Dam of their sire has 19,500 lbs. They are choice bulls and priced right. For full particulars, write

R. HONEY & SONS, Dartford, Ont. (Hastings Station).

Cedar Dale Farm—The Home of Lakeview Johanna Lestrangle, the \$15,000 sire—He is the son of the 38,06-lb. cow, Lakeview Lestrangle, and is our chief sire in service. We are offering a few females bred to him, and also have a few bull calves sired by him at right prices. Other older bulls, sired by our former herd sire, Prince Segis Walker, son of King Segis Walker.

A. J. TAMBLYN, Cedar Dale Holsteins, (C.N.R. station one mile), Orono, Ont.

Cedarbrook Farm Holsteins

(Farm one-half mile from Inglewood Station C.P.R.-G.T.R.)

We are offering two young sons of Highland Pontiac Sylvia a 31.92-lb. son of Avondale Pontiac Echo. These are choice youngsters, ready for service and we guarantee satisfaction. Come and see them.

CEDEBROOK FARM

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INGLEWOOD, ONTARIO

table kingdom, generally bear on their rootlets small nodules or lumps, of the size of a pin head upwards. Microscopic study has shown that these nodules contain numerous small organisms, known as bacteria. These organisms belong to a particular group with a number of definite strains, each strain apparently confining itself strictly to a particular plant or group of plants. A long series of subsequent experimenting has proved that these bacteria convert the nitrogen of the air into a chemical form which the plant or group of plants can readily assimilate. The association, in short, of plant and bacteria is decidedly beneficial both to the legumes and the soil. The net result, at the end of the season, is a valuable addition of nitrogen to the farmer's field, at, practically, no expense.

Now "nitro-cultures" are simply collections of these bacteria ready bottled. The proper bacteria are isolated from all others, grown on artificial soil, consisting of a jelly made from an oriental seaweed mixed with chemical salts, and then bottled for sending out.

The farmer, when he receives the cultures, breaks up the jelly, shakes it up with some skim-milk or sugared water, and wets his seeds with the resulting liquid. This distributes the bacteria over the seeds, which, when dry, are sown; and, so, plant and bacteria are brought into intimate contact from the very commencement of growth.

Nitro-cultures are prepared by the Division of Botany for alfalfa and sweet clover, red and alsike clovers, and peas, and are put up in bottles containing sufficient bacteria for the treatment of about a bushel (60 lbs.) of seed. Cultures are supplied free to farmers on application to the Division of Botany, Central Experimental Farm, Ottawa, Ontario, on their stating the crop for which culture is required, and the quantity of seeds proposed to be treated. Only three such bottles in all, however, can be supplied to any one applicant.—R. A. Inglis, B. A., Assistant Botanist, Experimental Farms.

COMPLETE CLEARING SALE

Forty High-Class Holstein-Friesians

The entire Herd belonging to the Estate of the late Frank Boyle, selling at the farm 1½ miles west of
UNIONVILLE, ONTARIO, TUESDAY MAY 4th, 1920

To enlarge this sale, W. F. Elliott consigns six head

IF YOU WANT THE BEST OF FOUNDATION MATERIAL ATTEND THIS SALE

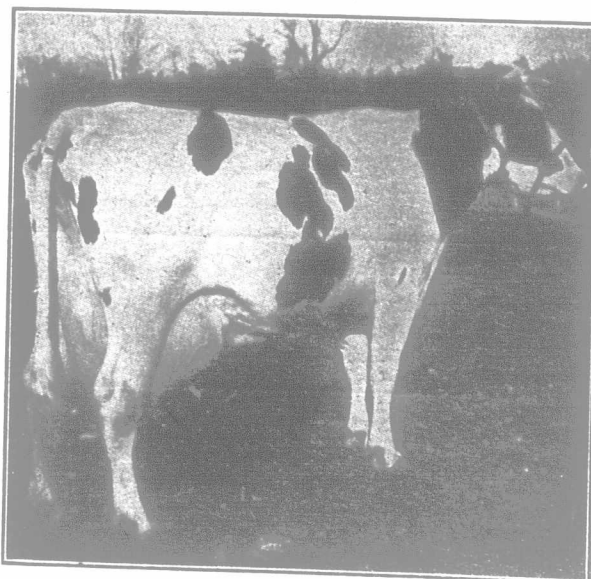
Included in the offering are:

TEN DAUGHTERS OF May Sylvia Pontiac Cornucopia

A great young breeding sire from a daughter of the breed's greatest cow May Echo Sylvia and sired by a son of K. P. Pontiac Lass the World's first 44.18-lb. cow. The daughters of this sire have won more money in the calf classes at Ontario Exhibitions than those of any three other sires combined. You can buy ten of his "best" in this sale.

EIGHT DAUGHTERS OF King Pontiac Artis Sylvia

This is one of the worth-while bulls used in this district during the past several years. He is sired by King Pontiac Artis Canada and his dam was that great 29.04-lb. cow Inka Sylvia 6th. His oldest daughters selling are 1916 heifers and they are all bred to either May Sylvia Pontiac



MAY ECHO SYLVIA
(The World's Greatest Cow)

If you buy this breeding you buy the best.

Cornucopia or Sir Echo Johanna Cornelius.

Sir Echo Johanna Cornelius

(Brother to the \$106,000 bull)

This bull is sired by King Echo Sylvia Johanna who was also the sire of Carnation King Sylvia the \$106,000 calf. On the dam's side he is from a 32.26-lb. four-year-old daughter of Pietje 22nd son. His calves as yet are only youngsters, but the half dozen selling will be a feature of the offering. He with May Sylvia Pontiac Cornucopia has been the chief sires in service. The majority of the breeding females are selling safe in calf to the service of one or the other of these two sires.

At the same time the farm will also be offered by public sale, subject to a reserve bid. This is undoubtedly one of the best 175 acre lots in York County. Call and look it over before sale day.

For catalogues apply to

Mrs. Frank Boyle, Unionville, or W. F. Elliott, Unionville, Ont.